

Switch ON the nominal SPIRE units  
 File: H\_FCP\_SPI\_NLBM.xls  
 Author: R. Biggins



## Procedure Summary

### Objectives

The objective of this procedure is to load a new OBSW image via the Boot Software for the Nominal DPU

### Summary of Constraints

This procedure is valid for the software version 2.2.H

### Spacecraft Configuration

#### Start of Procedure

SPIRE is OFF

#### End of Procedure

SPIRE is in DPU\_ON mode

### Reference File(s)

#### Input Command Sequences

#### Output Command Sequences

HFSNLBM

### Referenced Displays

ANDs	GRDs	SLDs
ZAZ08999		
ZAZ7E999		
ZAZ7F999		
ZAD14999		
SA_7_559		
SA_1_559		

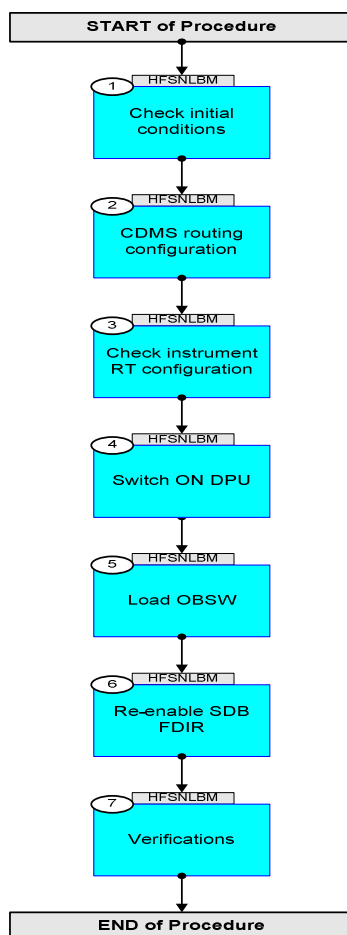
### Configuration Control Information

DATE	FOP ISSUE	VERSION	MODIFICATION DESCRIPTION	AUTHOR	SPR REF
17/01/2008		1 Created		R. Biggins	

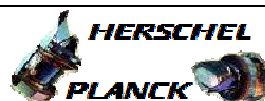
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## Procedure Flowchart Overview



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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
<b>Beginning of Procedure</b>				
HFSNLBM Load OBSM - BSW				
SSID :				
1		Check initial conditions		Next Step: 2
1.1		SPIRE input		<input type="checkbox"/>
		Verify that the correct information has been supplied by the ICC:  Software Image (verify with OBSM engineer)		
1.2		Bus status		<input type="checkbox"/>
		Verify Bus configuration		
		Verify: Active 1553 bus Active_Bus_A_B DEFJ1160	= BUS_A	AND=ZAZ08999
		Verify: 1553 bus FDIR status SDB_FDIR DEFJ4160	= ENABLED	AND=ZAZ08999
		Verify: SDB handling status BSW_SDB_ENAB DEF60160	= ENABLED	AND=ZAZ08999
		Verify bus health status		
		Verify: Bus (side A) health status BusA_HealthySts DEFJ2160	= Healthy	AND=ZAZ08999
		Verify: Bus (side B) health status BusB_HealthySts DEFJ3160	= Healthy	AND=ZAZ08999
1.3		Nominal instrument LCLs		<input type="checkbox"/>
		Verify: DPU LCL status SpirHsdN_L11_1S WM32C565	= OFF	AND=ZAZ7E999
		Verify: FCU LCL status SpirHsfN_L51_1S WM42C565	= OFF	AND=ZAZ7F999
1.4		Redundant instrument LCLs		<input type="checkbox"/>
		Verify: DPU LCL status SpirHsdR_L12_1S WM82C565	= OFF	AND=ZAZ7E999
		Verify: FCU LCL status SpirHsfR_L52_1S WM72C565	= OFF	AND=ZAZ7F999

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
1.5		Temperature		<input type="checkbox"/>
		TBD		
2		CDMS routing configuration		Next Step: 3
2.1		Verify Packet Routing		<input type="checkbox"/>
	ET=+ UT=+00.00.00	Execute Telecommand  RepDownlinkTMStorage  TC Control Flags :  GBM IL DSE --Y -- ---  SSID : 10	DC141160	
		Verify that the APIDs associated with SPIRE are ENABLED, and therefore transmitted to ground. The VPD should be used to view the packet contents.		
		Verify Packet Reception Telemetry Packets DownLinking-Storage Status Report Packet Details:  APID: 16 Type: 14 Subtype: 7 PI1: PI2:	(14,7)-1400	
		Verify Packet Telemetry (Pkt = (14,7)-1400)  APID DE047160	= 1280 <dec> = 1282 <dec> = 1284 <dec> = 1286 <dec>	VPD
		Verify Packet Telemetry (Pkt = (14,7)-1400)  Type DE043160	any	VPD
		Verify Packet Telemetry (Pkt = (14,7)-1400)  Sub-Type DE046160	any	VPD
		Verify Packet Telemetry (Pkt = (14,7)-1400)  Transmit_Flag DE048160	= ENABLED	VPD
3		Check instrument RT configuration		Next Step: 4
3.1		Remote Terminal configuration		<input type="checkbox"/>
		Verify Telemetry SPIRE_VitalNonV DE052161	= NonVital	AND=ZAZ08999
		Verify Telemetry SPIRE_TmRetry DE054161	= ON	AND=ZAZ08999

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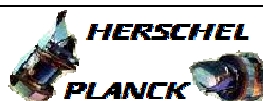
Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
3.2		Remote Terminal Status		<input type="checkbox"/>
		Nominal units		
		Verify Telemetry SPIREA_OnOff DED1G161	= OFF	AND=ZAD14999
		Verify Telemetry SPIREA_DeadAliv DED1H161	= Alive	AND=ZAD14999
		Verify Telemetry SPIREA_WellsiTc DED1Z161	= Well	AND=ZAD14999
		Verify Telemetry SPIREA_WellsiTm DED1J161	= Well	AND=ZAD14999
		Verify Telemetry SPIREA_ValidInv DED1K161	= Invalid	AND=ZAD14999
		Redundant units		
		Verify Telemetry SPIREB_OnOff DED21161	= OFF	AND=ZAD14999
		Verify Telemetry SPIREB_DeadAliv DED22161	= Alive	AND=ZAD14999
		Verify Telemetry SPIREB_WellsiTc DED23161	= Well	AND=ZAD14999
		Verify Telemetry SPIREB_WellsiTm DED24161	= Well	AND=ZAD14999
		Verify Telemetry SPIREB_ValidInv DED25161	= Invalid	AND=ZAD14999
4		Switch ON DPU		Next Step: 5
4.1		Set Bus Profile		<input type="checkbox"/>
	ET=+ UT=+00.00.00	Execute Telecommand SelectActiveSCBP Command Parameter(s) : SCBP DH049160 TC Control Flags : GBM IL DSE --Y -- --- SSID : 10	DC819160 SCBP_03	
		Verify Telemetry BSW_SDB_ActProf DEF5F160	= 3 <dec>	AND=ZAZ08999
4.2		Disable SDB FDIR		<input type="checkbox"/>

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
	ET=+ UT=+00.00.00	Execute Telecommand  ConfiguresSDBFDIR  Command Parameter(s) :  RTA                   DH011161               SPIRE A M0                    DH030161               Ignore Flag M1                    DH031161               Ignore Flag M2                    DH032161               Ignore Flag M3                    DH033161               Ignore Flag M4                    DH034161               Ignore Flag M5                    DH035161               Ignore Flag M6                    DH036161               Ignore Flag M7                    DH037161               Ignore Flag F0                    DH018161               OFF F1                    DH019161               Alive   F2                    DH020161               Well TC F3                    DH021161               Well TM F4                    DH022161               Invalid F5                    DH023161               Non-vital F6                    DH024161               NOMINAL F7                    DH025161               ON M_C                   DH043161               Ignore CNT M8                    DH038161               Ignore Flag M9                    DH039161               Ignore Flag M10                   DH040161               Ignore Flag M11                   DH041161               Update status CNT                   DH042161               LoopCnt1 F8                    DH026161               Bus A F9                    DH027161               Healthy F10                   DH028161               Healthy   F11                   DH029161               DISABLED  TC Control Flags :  GBM IL DSE --Y -- ---  SSID : 10	DC005161	
		Wait up to 1 minute		
		Verify: 1553 bus FDIR status SDB_FDIR                   DEFJ4160	= DISABLED	AND=ZAZ08999
4.3		Start instrument RT interrogations		<input type="checkbox"/>
	ET=+ UT=+00.00.00	Execute Telecommand  ConfiguresSDBFDIR  Command Parameter(s) :  RTA                   DH011161               SPIRE A M0                    DH030161               Update status M1                    DH031161               Ignore Flag M2                    DH032161               Ignore Flag M3                    DH033161               Ignore Flag M4                    DH034161               Update status M5                    DH035161               Ignore Flag M6                    DH036161               Ignore Flag M7                    DH037161               Ignore Flag F0                    DH018161               ON F1                    DH019161               Alive	DC005161	

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		F2 DH020161 F3 DH021161 F4 DH022161 F5 DH023161 F6 DH024161 F7 DH025161 M_C DH043161 M8 DH038161 M9 DH039161 M10 DH040161 M11 DH041161 CNT DH042161 F8 DH026161 F9 DH027161 F10 DH028161  F11 DH029161  TC Control Flags :  GEM IL DSE --Y -- ---  SSID : 10	Well TC Well TM Valid Non-vital NOMINAL ON Ignore CNT Ignore Flag Ignore Flag Ignore Flag Ignore Flag LoopCnt1 Bus A Healthy Healthy  DISABLED	
		Wait up to 1 minute		
		Verify Telemetry SPIREA_OnOff DED1G161	= ON	AND=ZAD14999
		Verify Telemetry SPIREA_ValidInv DED1K161	= Valid	AND=ZAD14999
4.4		Power ON DPU		<input type="checkbox"/>
	ET=+ UT=+00.00.00	Execute Telecommand SwOn_SpireHSPDU_N_L11  TC Control Flags :  GEM IL DSE --Y -- ---  SSID : 10	DC11D170	
		Verify: DPU LCL status SpirHsdN_L11_1S WM32C565	= ON	AND=ZAZ7E999
		Verify Telemetry SpireHsN_L11_I WM308565	= 0.54 A	AND=ZAZ7E999
		Wait for the generation of at least 2 TM(5,1) packets before proceeding.		
5		Load OBSW		Next Step: 6
		OBSM engineer to run the procedure H_FCP_OBS_5112 to generate the saved stack files for upload.		
		The saved stack file should be loaded directly on to the manual stack and uplinked.		

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
5.1		Boot DPU		<input type="checkbox"/>
	ET=+ UT=+00.00.00	Execute Telecommand <div>LOAD_TC_AND_BOOT</div> TC Control Flags : <div>GBM IL DSE --Y -- ---</div> SSID : 370	SCD11505	
		Verify Packet Reception <div>Nominal_HK_Parameter_Report</div> Packet Details: <div>APID: 1282 Type: 3 Subtype: 25 PI1: 769 PI2:</div>	SNOMHK000559	
		Verify Packet Reception <div>Critical_HK_Parameter_Report</div> Packet Details: <div>APID: 1280 Type: 3 Subtype: 25 PI1: 768 PI2:</div>	SCRITHK00559	
5.2		Verify DPU has booted		<input type="checkbox"/>
	ET=+ UT=+00.00.02	SET_OBS_MODE <div>SET_OBS_MODE</div> Command Parameter(s) : <div>OBSERVING_MODE SP02N500</div> TC Control Flags : <div>GBM IL DSE --- -- ---</div> SSID : 370	SC002500  0 <hex>	
		Verify Telemetry <div>MODE SM00M500</div>	= DPU_ON	AND=SA_7_559
6		Re-enable SDB FDIR		Next Step: 7



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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
	ET=+ UT=+00.00.00	Execute Telecommand ConfiguresSDBFDIR Command Parameter(s) : RTA DH011161 SPIRE A M0 DH030161 Ignore Flag M1 DH031161 Ignore Flag M2 DH032161 Ignore Flag M3 DH033161 Ignore Flag M4 DH034161 Ignore Flag M5 DH035161 Ignore Flag M6 DH036161 Ignore Flag M7 DH037161 Ignore Flag F0 DH018161 ON F1 DH019161 Alive F2 DH020161 Well TC F3 DH021161 Well TM F4 DH022161 Valid F5 DH023161 Non-vital F6 DH024161 NOMINAL F7 DH025161 ON M_C DH043161 Ignore CNT M8 DH038161 Ignore Flag M9 DH039161 Ignore Flag M10 DH040161 Ignore Flag M11 DH041161 Update status CNT DH042161 LoopCnt1 F8 DH026161 Bus A F9 DH027161 Healthy F10 DH028161 Healthy F11 DH029161 ENABLED TC Control Flags : GBM IL DSE --Y -- -- SSID : 10	DC005161	
		Wait up to 1 minute		
		Verify: 1553 bus FDIR status SDB_FDIR DEFJ4160	= ENABLED	AND=ZAZ08999
7		Verifications		Next Step: END
		Verify: OBSW version OBSVER1 SM0EN500	= 2 <dec>	AND=SA_1_559
		Verify: OBSW version OBSVER2 SM0FN500	= 2 <dec>	AND=SA_1_559
		Verify: OBSW version OBSVER3 SM05F500	= H	AND=SA_1_559
		Verify that the following parameter is incrementeng once per 2 seconds TM1N SMT0N500	incrementing	AND=SA_1_559
		Verify that the following parameter is incrementeng once per second TM2N SMT1N500	incrementing	AND=SA_7_559

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		Verify that the following parameter is incrementeng once per second	incrementing	AND=SA_7_559
		THSK SM00T500		
End of Procedure				